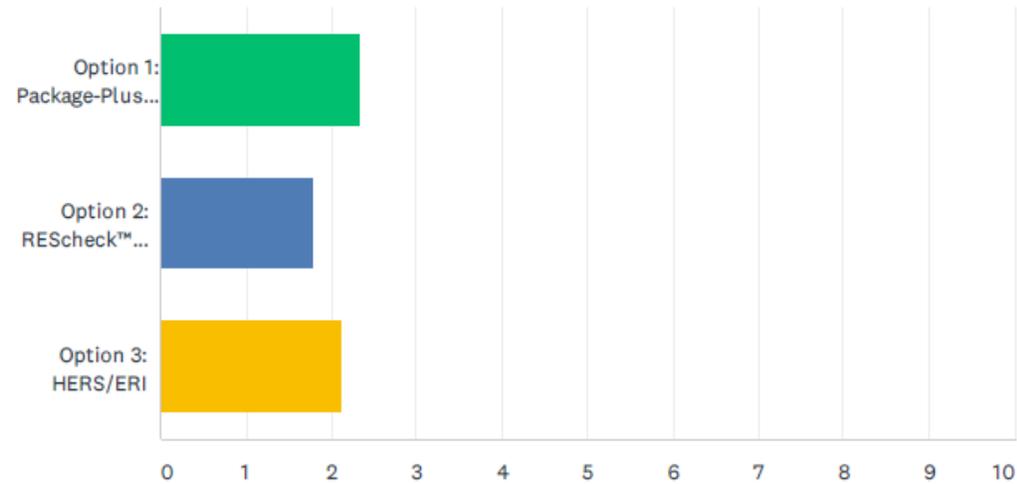


# Residential Survey Results

# Which compliance paths do you use? (Rank in order of most common)



	1	2	3	TOTAL
Option 1: Package-Plus-Points	55.56% 5	22.22% 2	22.22% 2	9
Option 2: REScheck™ software	22.22% 2	33.33% 3	44.44% 4	9
Option 3: HERS/ERI	33.33% 3	44.44% 4	22.22% 2	9

# What 2020 RBES changes did you find most challenging to address?

- Our designs have been exceeding RBES 2020.
- Not being able to use dense pack cellulose in closed cavity ceilings. As long as the air sealing is done correctly and the density is correct, ventilation is not necessary. it's easy to add roof ventilation in new construction. It's a barrier to retro-fitting existing homes.
- We have had to internalize the Points system (make them part of our Standard Package) and not give the options to clients. Clients are confused by the choices
- Exterior insulation. It has not been thought out for our climate. Many of us do not want to use closed cell foams.

# To further the state's energy and carbon savings goals, where would you recommend efficiency improvements in the next RBES update come from?

- State policies, infrastructure and supply chain. Continuing to rely on the construction industry to adapt and advance its product is not in alignment with what the market can bare for construction costs, nor are their adequate skills and human resources available to implement continued advancements in building systems. Material and equipment manufacturers develop product lines to serve markets across the country and beyond. They do not have a specific market motivation to create products that ease the advancement of specific EE mandates in small markets such as VT. So that means advancement comes back to the builder
- further increase shell requirements
- Continuous insulation on above grade walls No more bath fan-only ventilation anymore. Need HRV or ERV. No more slabs with no insulation underneath. EV charging mandatory 200A panels for futureproofing If hydronic building, designed for low temp distribution even if fossil fuel now
- The envelope needs to get to passive house standards for new construction.
- If you really want to solve an energy / carbon problem you'll stop focusing on the handful of newly built homes and start focusing on existing homes. . . . I'm sure someone has the statistics here. My guess is existing homes account for 90+ % of energy use .
- Biomass promotion. Cradle-to-grave embodied energy -- especially recognizing the value of existing buildings.
- Use a whole-building approach. This means utilizing equipment efficiencies, design efficiencies (e.g., plumbing runs), human comfort (ASHRAE 55), and the allowance to change the design temperatures to evaluate performance.
- Not necessarily. Focusing on electrification and HERS compliance path would be a step forward.
- I am recalling that the 2016 VT CEP calls for ZE new homes by 2030. If we are to be impactful we need to be there ASAP. NOAA's recent reports show our GHG emissions increased during the pandemic.

# Should all-electric new construction be required in code? Why or why not?

- No. Limits accessibility to affordable housing first costs to Vermonters in lower income brackets. Unless all electric construction is heavily subsidized for varying economic categories there will still be a need for old-cheap-dirty energy sources
- bio-fuel options
- Maybe not yet, but set foundation for it. Require some futureproofing measures now to set stage for next code cycle. E.g. electric service.
- I think there is still a role for biomass to play in some applications. That said I'm in support of a code that pushes for all-electric applications, in principle.
- Yes, with the caveat that super efficient wood stoves be allowed as back ups for when the power goes out for long periods of time. batteries may not have enough storage capacity to get a household through a long outage in the winter.
- If you have a goal of net zero than it needs to be all-electric.
- NO for reasons stated above.
- It is too rigid. Back up systems using gas or wood are needed. Look past the code to the interpretations, implementations and worse-case scenarios to evaluate this.
- Probably not yet. We need the technology to improve for air-water heat pumps. And we need to think through how to design heating distribution requirements for low and high temp systems.
- Yes (though I believe wood should be allowed), as long as the grid is clean.

# Are there any errors in the code that need to be addressed? Be specific.

- Yes. Not going to list them all here
- not that I know of, it's a work in progress
- I don't have a clear answer yet on specific errors. I do believe that the code should be expanded to include analysis of carbon emissions (including embodied carbon of enclosure materials), or at a minimum an emissions-based framework in developing energy reduction targets for code updates.
- I haven't read it carefully enough to spot the errors.
- The lack of enforcement is a really big problem. And the Packages are overly simplistic (vs Building Codes are much more detailed and specific re; vapor barriers, required R values etc). . . . . to have an overly simplistic package that's getting more stringent without any oversight from code officials (experts) is a recipe for disaster. What good is a (energy) code built home that starts rotting on day one ?
- YES - thin exterior insulation is a problem in our climate.
- The RBES has been developed in a pro-active environment that needs to continue.
- Don't know.
- Not creating a marketable defect in title? Lack of enforcement? Lack of builder registration or licensure.

# How should we address solar requirements for sites with inadequate solar access?

- community solar. Accept the fact that PV and other renewable generation may not be ubiquitously practical to write in as a mandate
- community solar?
- Don't.
- Off-site/community renewables and utility-scale renewable portfolios, where they can be validated. Important in all cases for RECs to be retired.
- Homes with inadequate solar access should be access through other means. I'm sure there are creative solutions to make that work.
- I believe regional net zero is more important than single property net zero. Especially in villages or other concentrations of habitation.
- Promote community-based energy generation.
- Availability to community solar
- Off-site or community solar and/or other renewable generation.

# Do you have thoughts on how to address ventilation?

- balanced ventilation should be a base requirement across the board.
- balanced ventilation, no exhaust only, dangerous as homes keep getting tighter!
- Eliminate exhaust only - a decade ago. See EVT guidance on kitchen ventilation, not sure if it becomes a requirement at this point or not. Probably the only thing I'd recommend for now is to not allow mega-exhaust (over 400 cfm?) and to make sure there's a pickup to outdoors/HRV return in kitchen area. Align SF and MF.
- Whole-house balanced ventilation with recovery, plus dedicated kitchen range exhaust. This should be required.
- I'm sure that new construction can be figured out pretty easily. Retro-fitting will need to have allowances for site specific creative solutions.
- IECC is far off in the mechanical world. Passive ventilation, cooling and heating should be encouraged. I agree with our tight buildings any exhaust needs to be balanced with intake, but those can be passive.
- Balanced ventilation is a no-brainer. Installing equipment so that occupants cannot disable it is another issue.
- All kitchen ventilation should be exhausted outside if it is not specified already. Balanced ventilation should be required for multi-family.
- It's time to eliminate exhaust-only in new homes. It's trickier with existing homes.

# Do you have thoughts on how to further improve the efficiency of log homes?

- nope
- stop building them,
- Make them insulate to equivalent R-values at stick-built. No more free pass.
- New construction log homes should be held to the same standard as the rest of construction.
- they need to have the same ACH50 requirements as all other types of residential construction. if they can't, they should not be allowed to be built.
- Begin to see them as part of a regional model.
- Yes. Stop evaluating them on the basis of R-value and convective heat. They need to be evaluated as a radiant system. They are a mass timber system that performs at better than the tested R/inch of a 1" wood sample. The old mindset of a leaky log home is already addressed and today's log builders have achieved <3ACH50. Move on.
- Tough issue. I hate to eliminate an industry, but I don't see how to make a log home
- Stop building them.

# Do you have any other comments?

- We need to push the code harder. incremental changes at a gradual pace will not get us where we need to be quickly enough. There is no reason whatsoever that all new homes can't be built to the highest standards for thermal and operation performance.
- The VT Energy Code really needs to hit the pause button until a Statewide system to administer building, electrical, and plumbing codes is established. To do otherwise is reckless. Some of the current Code Packages are bad building science if done a certain way. A building official (expert) must oversee these codes.